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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,359	08/19/2003	Ning An	50277-1068	4851
23517 7590 07/25/2008 BINGHAM MCCUTCHEEN LLP 2020 K Street, N.W. Intellectual Property Department WASHINGTON, DC 20006				
EXAMINER				
CAO, PHUONG THAO				
ART UNIT		PAPER NUMBER		
2164				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/643,359

Applicant(s)

AN ET AL.

Examiner

Phuong-Thao Cao

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-11,14,15 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-11,14,15 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/19/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to Amendment/RCE filed on 12/17/2007.
2. Claims 1, 6, 14 and 18-20 have been amended, claims 2, 5, 12, 13, 16 and 17 were previously cancelled. Currently, claims 1, 3, 4, 6-11, 14, 15 and 18-20 are pending.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/17/2007 has been entered.

Response to Amendment

4. Amendment to the specification is not effective to overcome the objection to the specification since the filing date of the provisional application is incorrect (i.e., it should be "May 15, 2003" instead of "May 15, 2004"). Therefore, objection to specification is maintained.
5. Amendments to claims are effective to overcome the 112, 2nd rejection in the previous office action. Therefore, the previous 112, 2nd rejection has been withdrawn.

Response to Arguments

6. Applicant's arguments, see Remarks, pages 10-11, filed 12/17/2007, with respect to claims 1, 3, 4, 6-11, 14, 15 and 18-20 have been fully considered and are persuasive. The 35 U.S.C § 103(a) rejection of claims 1, 3, 4, 6-11, 14, 15 and 18-20 has been withdrawn.

Drawings

7. Figures 3 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not

accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

8. The amended paragraph 1 of the specification is objected as containing an incorrect filing date for the U.S. Provisional Patent Application Serial Number 60/470,680. The correct filing date should be May 15, 2003.

9. Regarding the section of Brief Description of the Drawings, paragraphs [25] and [26], the description of FIG. 3 and FIG. 4 should include a label "Prior Art" to clarify Generalized Bulk Insertion as old/known in the art and describe the illustration as prior art. Appropriate corrections are required.

Claim Objections

10. Claims 1, 3, 4, 6-11, 14 and 15 are objected to because of the following informalities:

Regarding claim 1, 3, 4, 6-11, 14 and 15, the "method" as recited at the beginning of the claims should be replaced by "computer-implemented method" to clarify the method as process performed on computer. Appropriate correction is required.

Art Unit: 2164

Regarding claim 1, the extra “the” in the phrase “reorganizing *the* a second one...” (line 10) should be removed.

Regarding claim 18, the extra “the” in the phrase “reorganizing *the* a second one...” (line 11) should be removed.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 14, 15 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 14 and 20, the newly amended features of “clustering selected children of the node and the children of the buddy node” and “partitioning the entries of the clustered children of the node and the buddy node into a plurality of groups” are new subject matter which was not disclosed in the specification.

The specification, Fig. 5, step 511 and paragraph [41], discloses the clustering node and buddy node. Since each node has entries and each entry pointed to one of its children (i.e., child node), clustering node and buddy node implies clustering the children of the node and the children of the buddy node. However, there is no disclosure of clustering *the selected children* of the node and the children of the buddy node.

The specification, Fig. 5, step 513 and paragraphs [39] and [41], discloses the partitioning step as partitioning clustered children of the node and the buddy node (which also mean partitioning clustered entries of the node and the buddy node wherein each entry represents a child node). However, there is no disclosure of partitioning *the entries of the clustered children* of the node and the buddy node.

Claim 15 is rejected as incorporating the deficiencies of rejected claim 14 upon which it depends.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1, 3, 4, 6-11, 14, 15 and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the conditional statement "wherein the selection is based on that the nodes of the index would overlap when the plurality of entries are inserted" raises question of

whether selecting step is happened when the plurality of entries are not inserted or the nodes of the index would not overlap as well as question of which nodes of the index are selected.

Regarding claim 1, "the entries" in inserting step (line 7) may be interpreted as relating to entries of each nodes in the index (line 3) while it means to refer to the plurality of entries provided for inserting. Therefore, "the entries" recited in the inserting step (line 7) should be changed to "the plurality of entries" in order to clarify this confusion.

Regarding claim 1, it is unclear whether "the nodes of the index" as recited in lines 7, 8, 10 and 11 are referred to "nodes of the index" or "selected nodes of the index".

Regarding claim 1, Applicant is advised to amend "such that an amount of overlap is reduced" (line 12) in another way to positively recite features of the claimed invention (e.g., reducing amount of overlap by...).

Regarding claims 3 and 4, these claims are rejected as incorporating the deficiencies of claim 1 upon which they depend.

Regarding claim 6, the conditional statement "wherein the selection is based on that the selected children of the index would overlap when the plurality of entries are distributed" raises question of whether selecting step is happened when the plurality of entries are not inserted as

well as question of how the selection is based on condition on the selected children, which is the result of the selection.

Regarding claim 6, "the entries" in the distributing step (line 8) may be interpreted as relating to entries of each of the selected children (line 4) while it means to refer to the plurality of entries provided for inserting. Therefore, "the entries" recited in the distributing step (line 8) should be changed to "the plurality of entries" in order to clarify this confusion.

Regarding claim 6, it is unclear what "children of the index" means. It is believed that Applicant intends to claim "children of the node". In particular, "the selected children of the index" (line 5), "a first one of the selected children of the index" (line 6), "the selected children of the index" (line 7) and "a partitioned child of the index" (line 10) should be amended appropriately. In addition, children of a node are certainly sibling.

Regarding claim 7, Applicant is advised to amend "such that an amount of overlap of bounding boxes for objects in the spatial index is reduced" (line 12) in another way to positively recite features of the claimed invention (e.g., reducing amount of overlap of bounding boxes for objects in the spatial index by...).

Claims 8-11 are rejected as incorporating the deficiencies of rejected claim 6 and/or 7 upon which they depends.

Regarding claim 14, “one or more of the entries” (line 11 and line 14) may be interpreted as relating to entries of each of the selected children (line 5) while it means to refer to the plurality of entries provided for inserting. Therefore, the “one or more of the entries” (line 11 and line 14) should be changed to “one or more of the plurality of entries” to clarify this confusion.

Claim 15 is rejected as incorporating the deficiencies of rejected claim 14 upon which it depends.

Regarding claim 18, this claim is rejected based on the same reasons as indicated above for claim 1.

Regarding claim 19, this claim is rejected based on the same reasons as indicated above for claim 6.

Regarding claim 20, this claim is rejected based on the same reasons as indicated above for claim 14.

Claim Rejections - 35 USC § 101

15. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16. Claims 14, 15 and 18-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 14 and 20, claims 14 and 20 containing new subject matter, “clustering selected children of the node and the children of the buddy node” and “partitioning the entries of the clustered children of the node and the buddy node”, which is not disclosed in the specification are directed to non-statutory subject matter.

Claim 15 is rejected as incorporating the deficiencies of rejected claim 14 upon which it depends.

Regarding claims 18-20, claims 18-20 are directed to “manufacture” claim wherein a statutory "manufacture" in computer programming field should include instructions (i.e., program codes) stored in some appropriate medium. The "tangible computer-readable medium" is not specified in the specification. Therefore, the “tangible computer-readable medium” is generally interpreted as a computer-readable medium which is tangible. According to Applicant's specification, paragraph [51], computer-readable media may include non-volatile media, volatile media, and transmission media wherein transmission media such as coaxial cable, copper wire and fiber optics while being tangible are not appropriate media for storing instructions. Therefore, the recited "tangible computer-readable medium", which is not limited to appropriate media, is directed to non-statutory subject matter.

Allowable Subject Matter

17. Claims 1, 3, 4, 6-11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and claim objections, set forth in this Office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Phuong-Thao Cao** whose telephone number is (571)272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Charles Rones** can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong-Thao Cao, Examiner
Art Unit 2164
July 16, 2008

/Charles Rones/
Supervisory Patent Examiner, Art Unit 2164

